

ABSTRACT

Yoke plates (3a, 3b) of magnetic material adapted for rotation in synchronism with a rotary shaft (2) are installed. An axially magnetized magnet (5) is disposed through the yoke plates (3a, 3b) and an air gap (G1). The outer diameter (R1) of the yoke plates (3a, 3b) is larger than the outer diameter (R2) of the magnet (5). The magnet (5) is fixed to a fixing plate (6) of magnetic material. Hall ICs (9a, 9b) are attached to the front ends of the pole pieces (8a, 8b) of the fixing plate (6). The Hall ICs (9a, 9b) are disposed in a magnetic circuit (M) formed by the magnet (5). When the rotary shaft (2) rotates, the opposed areas (S1, S2) between the magnet (5) and the yoke plates (3a, 3b) vary, so that the density of magnetic flux passing through the Hall ICs (9a, 9b) in the magnetic circuit (M) linearly varies in proportion to the rotation angle. The Hall ICs (9a, 9b) catch this variation and detect the rotation angle of the rotary shaft (2). Thereby, the cost of production of the rotation angle detection device is reduced without deteriorating the detection accuracy.
